

Table 3-1. Criteria Pollutant Concentrations from WVDP Boiler Emissions and Regional Background

Criteria Pollutant	Averaging Time	Standard ^{a,b}	Concentration From WVDP Emissions ^{b,c}	Background Concentration ^{b,d}	Total Concentration ^b	Percent of Standard
Nitrogen dioxide	Annual	100 ^{g,h,i} (0.053 ppm)	1.5	41	42	42
Carbon monoxide	1 hour	40,000 ^{g,i} (35 ppm)	15	5,800	5,800	14
Carbon monoxide	8 hours	10,000 ^{g,i} (9 ppm)	11	3,200	3,200	32
Sulfur dioxide	Annual	80 ^{g,i} (0.03 ppm)	0.10	17	17	22
Sulfur dioxide	24 hours	365 ^{g,i} (0.14 ppm)	0.50	63	64	17
Sulfur dioxide	3 hours	1,300 ^{h,i} (0.5 ppm)	1.1	160	160	12
Particulate matter ^e	Annual	50 ^{g,h}	0.11	21	21	42
Particulate matter ^f	24 hours	150 ^{g,h}	0.56	61	61	41
Ozone	1 hour	235 ^{g,h} (0.12 ppm)	(--)	210	210	89
Lead	Quarterly	1.5 ^{g,h}	(--)	0.03	0.03	2

- a. Standards from 40 CFR 50, National Primary and Secondary Ambient Air Quality Standards and 6 NYCRR 257, Air Quality Standards. Comparisons to the standards for particulate matter with an aerodynamic diameter less than 2.5 micrometers and the 8-hour ozone standard were not made because these standards have been remanded to the U.S. Environmental Protection Agency by the U.S. Court of Appeals.
- b. Units in micrograms per cubic meter. Parts per million not calculated for substances that do not exist as a gas or vapor at normal room temperature and pressure.
- c. The maximum criteria pollutant concentrations from WVDP boiler emissions were located 1,379 meters (4,524 feet) from the WVDP site.
- d. Source: EPA 2001. Background concentrations were measured near Buffalo, New York.
- e. Annual state standard is 45 to 75 micrograms per cubic meter according to level designation.
- f. 24-hour state standard is 250 micrograms per cubic meter.
- g. National primary ambient air quality standard.
- h. National secondary ambient air quality standard.
- i. New York State air quality standard.

emission cap of 90,700 kilograms (100 tons). Additionally, all other conditions of the permit continue to be met for other criteria pollutants (WVNS 2001). A more detailed analysis of these emissions is included in Section C.9 of this EIS.

3.4 ECOLOGICAL RESOURCES

This section describes the existing ecology at the Project Premises and surrounding areas.

The Western New York Nuclear Service Center lies within the northern hardwood forest region. Its climax community forests are characterized by the dominance of sugar maple, beech, and Eastern hemlock. At present, the site is about equally divided between forestland and abandoned farm fields. Plant communities found on the site have been categorized into five cover types: mixed hardwood forest, pine-spruce community, successional creek bank communities, late oldfield successional areas, and fields-meadows. The plant communities found on the site are characteristic of western New York. The relatively undisturbed nature of large portions of the Western New York Nuclear Service Center has allowed for natural succession of previous agricultural areas within its boundaries. Because neither the

setting nor the former agriculture land use is unique, the forest communities that will eventually develop in the abandoned fields will be similar to others in the region (WVNS 2000b).

In an effort to manage the overpopulation of deer within the Western New York Nuclear Service Center with a goal of reducing the number of deer/vehicle collisions on roads around the Center, NYSERDA has allowed controlled hunting (during the deer hunting season) within the Center premises but not within the Project Premises. A deer management program that was implemented in 1998 resulted in the removal of all the deer within the WVDP premises (WVNS 2000b).

3.4.1 Special Status Species

Animals. The U.S. Department of Interior and the New York State Department of Environmental Conservation maintain lists of threatened and endangered species of wildlife (USFWS 2001; NYSDEC 2001) that are protected under the Endangered Species Act of 1973 and the Fish and Wildlife Coordination Act of 1958. Except for occasional transient individuals, there are no federally listed or proposed endangered or threatened species in the vicinity of the WVDP (USFWS 2001). Based on population range maps, threatened or endangered species with potential for occurring at the Western New York Nuclear Service Center include:

- Birds
 - Common tern - state threatened
 - Bald eagle - federal threatened and state endangered¹
 - Loggerhead shrike - state endangered
 - Northern harrier - state threatened
 - Osprey - state threatened (recommended for state special concern status)
 - Peregrine falcon - state endangered
 - Piping plover - federal and state endangered
 - Red-shouldered hawk - state threatened (recommended for state special concern status)
 - Spruce grouse - state threatened recently (recommended for state endangered status)
- Mammals
 - Indiana bat - federal and state endangered
- Herptiles
 - Eastern massasauga - state endangered
 - Timber rattlesnake - state threatened

Field investigations in 1990 and 1991 recorded one species (Northern harrier) on the state list of threatened species and six state species of special concern (Cooper's Hawk, upland sandpiper, common raven, Eastern bluebird [recommended for unlisted status], Henslow's sparrow [recommended for threatened status], and vesper sparrow). State of New York "special concern species" are species of fish and wildlife found to be at risk of becoming endangered or threatened in New York (New York Code of Rules and Regulations Title 6, Part 182.2(i)). Typically, species of special concern are those whose populations are declining, often in association with critical habitat loss. All the noted species were observed in areas of the Western New York Nuclear Service Center outside the WVDP. Moreover, none of these threatened species or species of special concern depend on areas within the WVDP for any aspect of their life cycle. Eight birds, two mammals, and six herptiles on the special concern list may potentially occur at the Center. Four of the listed birds (common loon, Northern raven, common nighthawk, and

¹ Proposed for removal from the Federal Endangered Species list (USFWS 2001, NYSDEC 2001).

Eastern bluebird [recommended for unlisted status]) have been recorded at the Center. While suitable habitat for some of these species exists on the site, their presence at the Center (except in the case of the Eastern bluebird) is not due to the presence of critical habitat within the Center. The Eastern bluebird habitat has been artificially created by a substantial bluebird nesting box program; this program has proved very successful. During 1990, approximately 85 birds were fledged from boxes at the Center (WVNS 2000b).

Plants. Field studies from 1982 and 1983 revealed no plant species in the study area on either the state or federal protected plant lists. Field studies conducted by several groups since 1973 have also failed to record any such species. Field studies were conducted in the spring of 1992 to re-examine the Western New York Nuclear Service Center with respect to the current state and federal protected plant lists. No federally threatened or endangered species were identified. One each of New York State endangered and threatened plant species were reported in 1992 within the Western New York Nuclear Service Center (WVNS 2000b). A recent field botanical investigation was conducted in June and August 2000, in an effort to confirm the 1992 reported presence of a New York State endangered plant. No endangered plants were found in the location and area as reported in 1992 (Dames and Moore 2000a and 2000b).

Habitats. The U.S. Department of the Interior, Fish and Wildlife Service, maintains a file of habitat locations designated as critical to the survival of federally listed endangered or threatened species. Based on a review of the most recent listings and contact with the U.S. Fish and Wildlife Service, Cortland, New York field office (June 1997), no such habitats occur in or around the site (WVNS 2000b).

Critical habitats are also designated by the New York State Department of Environmental Conservation, Bureau of Wildlife. The state-designated critical habitats are areas found to be of significance to game and other important wildlife species. Such areas could include seasonally important wintering areas and breeding grounds. A 16-square-kilometer (6-square-mile) area encompassing the entire Western New York Nuclear Service Center site has been classified as critical habitat due to its extensive use as a whitetail deer (a game species) wintering area. The area has been designated because softwood shelter availability is rated intermediate, and food availability is rated good. Five other areas within a 16-kilometer (10-mile) radius of the site are similarly designated (WVNS 2000b).

Examination of state and federal lists of threatened and endangered species and range maps, performance of field sampling and a literature survey, and interviews with local experts provided no indication that any threatened or endangered aquatic flora or fauna exist in the reservoirs, ponds, or streams on the Western New York Nuclear Service Center or in its vicinity. The New York State Department of Environmental Conservation has delineated an Eastern sand darter area on Cattaraugus Creek near Perrysburg, New York. This area is protected to preserve the state-listed endangered species. The Eastern sand darter species is a state-listed threatened species (NYSDEC 2001).

3.4.2 Wetlands

The Western New York Nuclear Service Center has meadows, marshes, lakes, ponds, bogs, and other areas that are considered functional wetlands. Fifty-one such areas have been identified as “jurisdictional” wetlands, or wetlands that are constrained from dredging or filling actions by Section 404 of the Clean Water Act and by the state Freshwater Wetland Act (WVNS 1992a). These wetlands range in size from 100 square meters (1,100 square feet) to more than 37,000 square meters (398,000 square feet). The total wetlands area is approximately 0.14 square kilometers (0.05 square miles). Eighteen wetlands with a total area of approximately 37,000 square meters (398,000 square feet) were delineated within the Project Premises. The New York State Department of Environmental Conservation has determined that eight wetlands encompassing 81,000 square meters (872,000 square feet) on the south and east sides of the Project Premises and SDA are linked and meet the criteria for a single wetland.

3.4.3 Floodplains

The site's topographic setting renders major flooding unlikely; local run-off and flooding is adequately accommodated by natural and man-made drainage systems in and around the WVDP (WVNS 2000b). Flood levels for the 100-year and the 500-year storms show that no facilities on the Project Premises are in either floodplain (FEMA 1984).

Cattaraugus and Buttermilk creeks lie in deep, narrow valleys. Therefore, the effects on the WVDP of flooding by these creeks are negligible, as supported by historical data. Frank's Creek, Quarry Creek, and Erdman Brook are also located in deep valleys. Historical evidence and computer modeling indicate that flood conditions (including the probable maximum flood) will not result in stream flows overtopping their banks and flooding the plateau. However, indirect damage from the erosional effects of high stream flows and excessive slope saturation during flood conditions is a possibility. The facilities likely to be most affected by bank failure and gully head advancement due to extreme precipitation are lagoons 2 and 3, the NDA, and site access roads in several places (WVNS 2000b).

In the case of a hypothetical flood with peak discharge nearly eight times that of a 100-year flood, computer modeling suggests that floodwaters would overtop Rock Springs Road and some part of the floodwaters would flow across the plant area. Based on the topography in the plant area, it is likely that some portions of the site would experience shallow flows of moderate velocity. Flows would recede quickly, however, since the ditches that drain the site have gradients of up to 5 percent.

3.5 LAND USE AND VISUAL SETTING

The WVDP site consists of approximately 0.9 square kilometer (0.3 square mile) within the 14-square-kilometer (5-square-mile) Western New York Nuclear Service Center. It is located within the Cattaraugus highlands, which is a transitional zone between the Appalachian Plateau to the south and east and the Great Lakes Plain to the north and west. The Cattaraugus highlands range in elevation from 300 to 550 meters (1,000 to 1,800 feet). Deep valleys dissect rather flat-topped plateaus and support a climax plant community of northern hardwoods substantially reduced by agricultural activities (WVNS 2000b).

Slopes range from less than 5 percent to greater than 25 percent, with 5 to 15 percent slopes predominant. The Western New York Nuclear Service Center is drained by Buttermilk Creek, which flows into Cattaraugus Creek. Prior to 1961, much of the Center was cleared for agriculture. As a result, the Center now consists of a mixture of abandoned agricultural areas in various stages of ecological succession, forested tracts, and wetlands and transitional ecotones between these areas. The generally acidic and poorly drained soils influence the occurrence, distribution, and relative abundance of plant communities and their associated faunal species. The region's temperate climate is not prone to natural forest or grassland fires (WVNS 2000b).

The WVDP is on a plateau in the central portion of the Western New York Nuclear Service Center. The WVDP plateau elevation is approximately 430 meters (1,400 feet). The plateau margins are subject to erosion, especially along the banks of gully and stream drainage ways that cut into the plateau and feed to several named streams that, in turn, feed into Buttermilk Creek (WVNS 2000b).

The Western New York Nuclear Service Center is owned and controlled by NYSERDA. However, by cooperative agreement between NYSERDA and DOE, NYSERDA has agreed not to use or authorize use of the Center in a manner that would interfere with DOE's carrying out the waste solidification project under the West Valley Demonstration Project Act. DOE provides general surveillance and security services for the entire Center, including the WVDP site (WVNS 2000b).